

identifying at least one frequency component of a sound feature, the at least one frequency component being from a first frequency range.

3. (Amended) The method of claim 2, wherein at least one haptic effect executed is associated with the at least one frequency component.

4. (Amended) The method of claim 1, the analyzing including:

separating the portion of sound data into a plurality of frequency components associated with a plurality of frequency ranges by applying a plurality of filters to the portion of sound data; and

identifying a sound feature associated with at least one frequency component from the plurality of frequency components.

5. (Amended) The method of claim 4, the plurality of filters having at least:

a low-pass filter; and

a high-pass filter.

6. (Amended) The method of claim 1, the analyzing including:

separating the portion of sound data into a plurality of frequency components associated with a plurality of frequency ranges using a fast Fourier transform (FFT); and

identifying a sound feature associated with at least one frequency component from the plurality of frequency components.

7. (Amended) The method of claim 6, wherein a number of outputs from the fast Fourier transform are grouped to provide sound features associated with each frequency range from the plurality of frequency ranges.

8. (Amended) The method of claim 4, wherein the at least one frequency component is each associated with a haptic effect related to the frequency range associated with the at least one frequency component.

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9. (Amended) The method of claim 4, wherein the at least one frequency component is each uniquely associated with a periodic haptic effect having a frequency corresponding to the plurality of frequency ranges associated with the at least one frequency component.

10. (Amended) The method of claim 1, wherein the at least one haptic effect was previously mapped to the at least one sound feature.

11. (Amended) A method, comprising:
storing a portion of sound data in a memory buffer of a computer;
analyzing the portion of sound data using heuristics to identify at least one high-level sound feature from said portion of sound data, the at least one high-level sound feature being associated with at least one high-level haptic effect; and
executing the at least one high-level haptic effect approximately with an output of the associated high-level sound feature.

12. (Amended) The method of claim 11, the analyzing including:
identifying at least one frequency component of a sound feature from a first frequency range.

13. (Amended) The method of claim 12, wherein the at least one high-level haptic effect is associated with the at least one frequency component.

14. (Amended) The method of claim 11, the analyzing including:
separating the portion of sound data into a plurality of frequency components associated with a plurality of frequency ranges by applying a plurality of filters to the portion of sound data; and
identifying a sound feature associated with at least one frequency component from the plurality of frequency components.

15. (Amended) The method of claim 11, the analyzing including:

separating the portion of sound data into a plurality of frequency components associated with a plurality of frequency ranges using a fast Fourier transform (FFT); and

identifying a sound feature associated with at least one frequency component from the plurality of frequency components.

16. (Amended) The method of claim 15, wherein a number of outputs from the fast Fourier transform are grouped to provide sound features associated each frequency range from the plurality of frequency ranges.

17. (Amended) The method of claim 14, wherein the at least one frequency component is each associated with a haptic effect related to the frequency range associated with the plurality of frequency components.

18. (Amended) The method of claim 14, wherein the at least one frequency component is each uniquely associated with a periodic haptic effect having a frequency corresponding to the plurality of frequency ranges associated with the at least one frequency component.

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19. (Amended) The method of claim 11, wherein the least one high-level haptic effect is executed as a haptic sensation output by a haptic feedback device.

20. (Amended) The method of claim 11, wherein the at least one high-level haptic effect is stored in memory of the computer as a created haptic effect.

21. (Amended) A computer readable medium having code stored thereon, the code comprising:

code to store a portion of sound data in a memory buffer of a computer;

code to analyze the portion of sound data using heuristics to identify at least one sound feature from the portion of sound data; and

code to execute at least one haptic effect based on the at least one sound feature, the at least one haptic effect being associated with the portion of sound data.

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22. (Amended) The computer readable medium of claim 21, the code to analyze including:

code to identify at least one frequency component of a sound feature, the at least one frequency component being from a first frequency range.

23. (Amended) The computer readable medium of claim 22, wherein at least one haptic effect is associated with the at least one frequency component.

24. (Amended) The computer readable medium of claim 21, the code to analyze including:

code to separate the portion of sound data into a plurality of frequency components associated with a plurality of frequency ranges by applying a plurality of filters to the portion of sound data; and

code to identify a sound feature associated with at least one frequency component from the plurality of frequency components.

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25. (Amended) The computer medium readable of claim 21, the code to analyze including:

code to separate the portion of sound data into a plurality of frequency components associated with a plurality of frequency ranges using a fast Fourier transform (FFT); and

code to identify a sound feature associated with at least one frequency component from the plurality of frequency components.

26. (Amended) The computer readable medium of claim 24, wherein the code to analyze is operative to associate each frequency component from the plurality of frequency components with a haptic effect.

27. (Amended) The computer readable medium of claim 21, wherein the at least one haptic effect was previously mapped to the at least one sound feature.